

ECONOMICS AND SOCIOLOGY  
OCCASIONAL PAPER NO. 1321

RURAL LOAN RECOVERY CONCEPTS AND MEASURES

by

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Paper Prepared for the Seminar on  
Issues in Rural Loan Recovery  
in Bangladesh

Sponsored by the Ohio State University,  
Bangladesh Bank and USAID

December 14, 1986  
Sonargaon Hotel  
Dhaka, Bangladesh

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## RURAL LOAN RECOVERY CONCEPTS AND MEASURES

### Introduction

Rural loan recovery is an extremely basic issue for the effective performance of financial institutions, but frequently it is surprisingly complicated and confused when it is measured and discussed. Perhaps because of the extreme emphasis on loan disbursement and credit targeting (supply-leading finance) in the past 10-15 years, there has been insufficient attention to systematically defining and measuring loan recovery, and analyzing its impact on the viability of rural financial institutions in developing countries. It is now recognized, however, that rural loan recovery is far poorer than anticipated, especially in many specialized agricultural financial institutions, that too little attention has been paid to monitoring loan recovery performance, and that loan recovery problems have often been swept under the carpet by those interests keen on expanding the flow of subsidized loans to agriculture. When loan recovery, delinquency and default data are presented, they are often so imprecise and ambiguous that they confuse more than they enlighten.

The purpose of this note is to illustrate a few key concepts that must be understood in order to confidently and intelligently analyze loan recovery problems. Although they should be understood by all who work in the field, the fact that they may not be is underscored by the recent experience of one of the major international agencies. A set of loan data was given to

several staff members who work full-time in rural finance. They were asked to develop loan recovery statistics based on the data. To the agency's chagrin, there were about as many different statistics as there were staff members participating in the exercise!

### Loan Recovery Profile

It may be useful to start this exercise by defining a concept I call a "loan recovery profile". It is represented in Figure 1. The diagram plots the relationship between time and the percent of loan principal repaid. Point A identifies the percent of outstanding loan principal repaid by the due date, and point B refers to the maximum amount recovered several periods later at  $t_n$  and is the maximum amount that can be expected to be recovered. The curve can describe a single loan or an entire portfolio. To simplify the example, it is assumed that the Figure represents short term loans payable in one installment. It is also assumed that standard banking practices are followed so that loan payments are credited first to interest, then to principal. Therefore, at all points on the curve it is assumed that all interest due has been paid.

The curve is drawn to represent the pattern of what is frequently found with rural loans anywhere in the world. First, only part of the loan principal is paid when due so part becomes overdue. The overdue portion declines, however, as borrowers make additional loan payments so that eventually loan recovery approaches 100 percent of loan principal. Although the principal

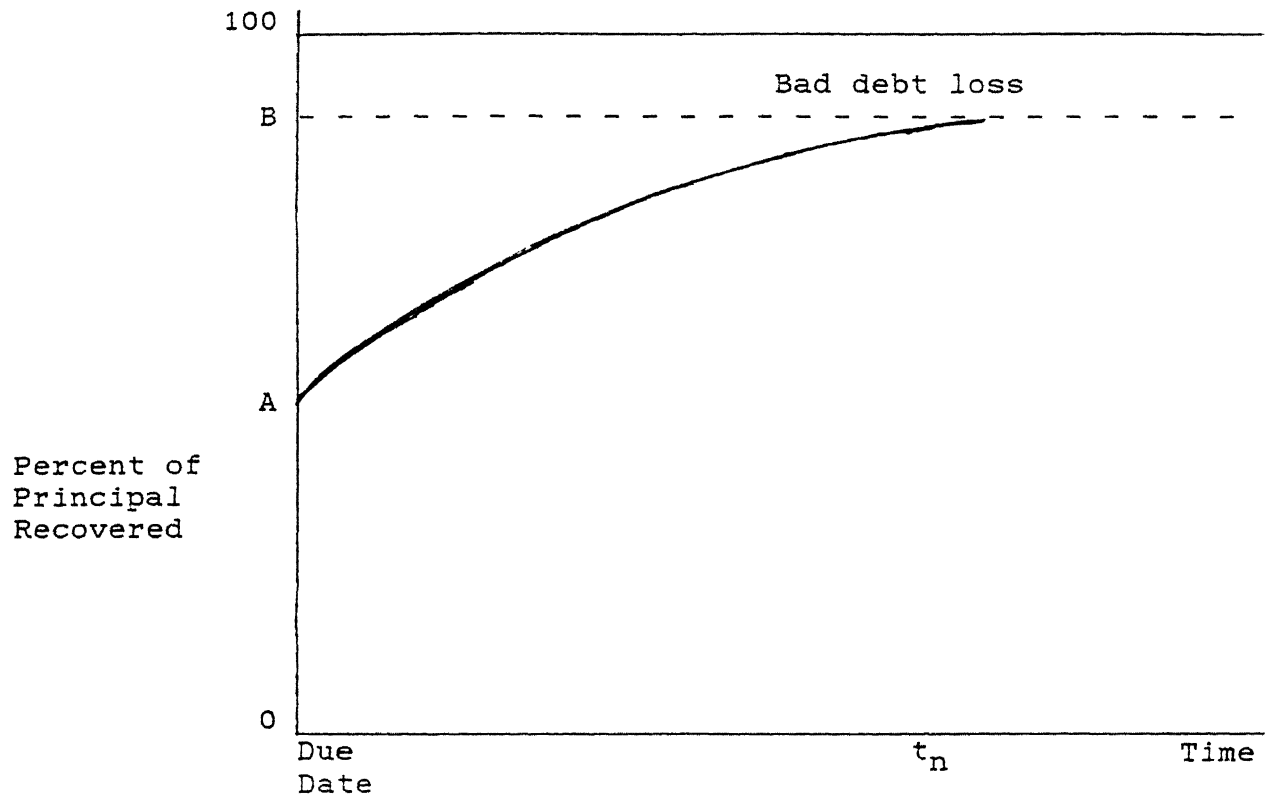


FIGURE 1  
Loan Recovery Profile

on most loans is fully recovered, this does not occur for all loans so some bad debt losses are eventually borne by the lender. Losses occur when loan repayments and collateral liquidation fail to cover all interest and principal obligations.

In a well-functioning unsubsidized lending institution, point A would, on average, exceed 90 percent and point B would reach 98 or 99 percent of the principal lent within a couple of years after due date. This would imply that the lender would be viable in the long-term by adding only 1 or 2 percent to the interest rate to cover losses due to bad debts, providing that the total interest charged covered the cost of funds, operating costs and profits. A characteristic of most financial institutions is that they have high leverage to equity ratios. A sudden change in the loan recovery profile, as has occurred recently in the U.S. farm credit system, can quickly destroy the financial institution, when interest rates are either fixed or sticky and, therefore, cannot be easily adjusted to meet the new higher expected losses.

Unfortunately, many agricultural credit institutions in developing countries are experiencing a far less satisfactory loan recovery profile. Frequently, point A may represent only 50 percent of the principal due and total recovery even after several years may reach less than 80 percent. This situation presents several problems to the lenders and to the entire economy. First, it is unlikely that a 20 percent or more loss rate can be passed on to paying borrowers through higher interest

rates. Interest rates would become so high that most borrowers could not afford to pay them. The only borrowers for such high interest loans might be those borrowers that never expect to repay. Government subsidies might be sufficient to cover losses if the total loan program is small, but might become too burdensome if the volume of loans made is large. Second, a low recovery rate at either point A or point B may have damaging demonstration effects so that slow paying borrowers "contaminate" the good paying ones, and the loan recovery profile for an institution's portfolio slips further downward. This point is ignored by many who argue that a high recovery rate at point A is not so important as long as it eventually rises to a high rate at B. Third, loan recovery often requires a great deal of staff time so this raises operating costs that must be passed on to the paying borrowers in the form of higher interest rates. Scarce staff time could be better used in making new loans rather than collecting delinquent ones. Fourth, low recovery may have negative impacts on average rates of return on investment and on income and wealth distribution. Borrowers who are delinquent in their loan payments enjoy the opportunity of recirculating loan funds in their businesses and households. Although the original use of the loan funds may have generated a high rate of return, either privately or socially, subsequent uses by the same borrower may not. Potential borrowers, many of whom may have higher rate of return projects, are denied loans because the lenders cannot relend recovered funds. Finally, as Cookson has

noted, there are potential inflationary effects if governments pump in new funds to finance loans for a wider group of borrowers in order to meet goals of production and technological change in agriculture.

It is important for bank managers and policy makers to have good information on loan recovery so they can make informed decisions concerning financial institutions. Point B must be estimated so appropriate reserves for bad debts can be established. Changes in the recovery profile need to be monitored over time to identify problems that may emerge, and to assess the impact of specific loan recovery strategies and programs.

#### Interpreting Loan Recovery Measures

Although it is easy to discuss the concept of loan recovery, the actual measurement and reporting of loan recovery and delinquency is a good deal more complicated. A problem is that some reports are so imprecise in their definitions that it is difficult to know exactly how to interpret the data. We must be especially sensitive to this problem now in Bangladesh as we attempt to clarify the allegation that loan recovery performance has declined.

One type of problem frequently encountered is shown in Table 1 which presents data suggesting that loan recovery has deteriorated in a hypothetical institution. Deterioration may have occurred but we cannot be certain from the data presented. First, what does the information on total recovery mean?

TABLE 1

Loan Recovery by Year  
Institution X, 1980-1985

Year	Total Disbursement	Total Recovery	Recovery Rate (%)
	(lac taka)		
1980	100	80	80.0
1981	130	102	78.5
1982	175	110	62.8
1983	150	90	60.0
1984	125	70	56.0
1985	116	58	50.0



Frequently, it means all money collected including principal and interest payments. Therefore, if the average annual interest rate is 15 percent, full recovery implies 115 percent of loans disbursed (measured on an annual basis), not 100 percent as is frequently assumed. Second, there is the problem of identifying payments due relative to loans disbursed. If the loans reported in Table 1 were all short-term, say 6 months, and were disbursed in the first half of the year so that all were due by the end of the year, and if the money recovered was for principal only for loans made just in that year, then we could interpret recovery to mean principal recovered relative to principal due, which is the crucial relationship. However, if these data represent a typical portfolio of operating and term loans and if the mix of the two types changes over time, then total disbursements are a poor proxy for principal due. We cannot conclude in this example, therefore, that loan recovery rates have either gone up or down over time relative to what is due.

Even though the data in Table 1 are limited in their value for analyzing loan recovery, they are valuable for another purpose, and that is understanding trends in source of funds. Many countries are concerned about the increasing amount of funds that must be provided by the central bank or external sources to fund agricultural credit programs. Many specialized agricultural credit institutions mobilize few deposits so funds for lending come from two sources: loan recovery and borrowings. The data in Table 1 can be unequivocally interpreted to mean that

institution X has become increasingly dependent on borrowing because funds from loan recovery have fallen from 80 percent to 50 percent of loans disbursed.

Another type of data frequently reported about an institution refers to proportion of loans paid as shown in Table 2. Once again caution is required in interpretation. It must be assumed that all loans included in Table 2 are due. If that is the case, these data serve as a guide to participation in loan repayment. The data can be easily generated by simply counting the number of paid and unpaid loans. A deterioration in the proportion of loans either fully or partly repaid, as shown in Table 2, can signal a decline in intention of borrowers to repay, and can reflect a decline in the effectiveness of loan collection programs. Ratios of repaid or unpaid loans are not really measures of financial performance, however. If unpaid loans eventually result in default, the financial consequences of default of a few large loans will be much more serious (i.e. a larger volume of loan principal not repaid) than many small loans. Data reporting number or proportion of loans paid, therefore, must be supplemented with information on the value of loan principal recovered.

Another type of loan recovery information is presented in Table 3. The data show the status on December 31, 1985 of loans made by institution X since its origin sometime before 1980. Each row of data gives the current situation of the loans made in each of the years of its operation through 1985. At first

TABLE 2

Loan Recovery by Year  
Institution X, Loans Made 1980-1985

Year	P e r c e n t   o f   L o a n s		
	Fully Repaid	Partially Repaid	Unpaid
1980	50	40	10
1981	51	39	10
1982	45	40	15
1983	43	38	19
1984	40	38	22
1985	39	39	22

TABLE 3

Status of Loan Portfolio  
Institution X, as of December 31, 1985

Year Loans Were Made	Amount Disbursed	Principal Recovered	Recovery Rate (%)
(lac taka)			
Prior to 1980	200	190	95.0
1980	100	90	90.0
1981	130	102	78.5
1982	175	110	62.8
1983	150	90	60.0
1984	125	70	56.0
1985	116	58	50.0

glance, we get the impression that the loan recovery rate has fallen. Even if we make the simplifying assumption that all loans made were due by December 31, 1985, we still can't say anything conclusive about possible changes in the recovery rate over time. The data in the Table actually represent the loan recovery profile shown in Figure 1. Ninety-five percent of the principal lent prior to 1980 has been recovered so bad loan losses are five percent if the decision is made that further collection efforts are useless and the remaining principal is written off. The cumulative amount of loan principal recovered is slightly less each successive year. The fifty percent recovery rate for 1985 refers to point A in Figure 1. Since we do not know the proportion of principal recovered at due date for each of the years, there is no way of knowing whether or not the 1985 experience is similar to other years or not. Likewise, we don't know the proportion of each year's principal recovered at the end of year 1, year 2, year 3, etc. so we cannot determine if the cumulative amount recovered in n periods after due date is different for loans made in one year versus another. There is no good way to estimate if loan recovery for loans made in years 1980 through 1985 will eventually reach 95 percent.

The type of data required to determine if the loan recovery profile has really changed over time is shown in Table 4. For each year, the percent of principal recovered at due date is reported along with the cumulative amounts for each successive year. It appears that the profile for 1980 loans patterned the

TABLE 4

Loan Recovery Profile  
Institution X, Loans Made 1980-1985

Year Loan Was Made	Due Date	Percent of Principal Recovered at					
		Plus One Year	Plus Two Years	Plus Three Years	Plus Four Years	Plus Five Years	More Than 5 Years
Prior to 1980	80.0	85.0	87.0	89.0	92.0	94.0	95.0
1980	79.0	84.0	87.0	89.0	90.0	90.0	-
1981	68.0	73.0	75.0	78.0	78.5	-	-
1982	60.0	61.0	62.0	62.8	-	-	-
1983	58.0	59.5	60.0	-	-	-	-
1984	55.0	56.0	-	-	-	-	-
1985	50.0	-	-	-	-	-	-

loans made previously until four years after due date when a plateau of 90 percent was reached. It is questionable whether or not the 95 percent level will ever be reached for these loans. Furthermore, beginning in 1981 the entire profile has shifted downward so it is questionable if loan recovery for subsequent years will even be as good as it was for 1980 loans. This situation would give cause for alarm as higher interest rates would have to be assessed to cover default risks. Otherwise, larger and larger infusions of government funds would be required to cover costs and keep the institution liquid enough to make a significant amount of new loans.

#### Ageing of Overdue Loans

The type of situation shown in Table 4 gives rise to the need for information about the ageing of overdue loans. Ageing of accounts gives management a picture of the probability of loss of principal. It is generally expected that the longer a loan account remains past due, the greater is the likelihood that it will not be collected in full. The analysis of past due accounts by age group can be used to help determine the appropriate provision for bad debt reserves. The probability of loss for each age group times the amount overdue yields the probable loss. Summing across the age groups gives the total reserve required for bad debts.

The ageing of arrears schedule is often presented in the following way:

Amounts in arrears:

For not more than 30 days	xxxxxx
From 31 to 60 days	xxxxx
From 61 to 90 days	xxx
From 91 to 120 days	xx
From 121 to 180 days	x
From 181 to 1 year	x
More than 1 year but not more than 2 years	x
More than 2 years	x

Using a similar format, the data in Table 3 might break down something like in Table 5. The probability of collection can be estimated for each category and the provision for bad debts determined. In practice, of course, the year loans are made is ignored because the important information is amount of arrears in each category.

A useful delinquency measure that can be calculated from these data is the percentage of arrears that are in the 121 to 180 day category, or more than 1 year but less than 2 year category, and so on. A comparison of these ratios over time presents another way to analyze trends in recovery performance or success of collection activities.

The ageing of arrears is essentially a stock measure of loan recovery. It emphasizes the impact of non-repayment on the value of the assets in the institution's balance sheet. Since non-



TABLE 5

Ageing of Arrears  
Institution X, December 31, 1985

Year Loans Were Made	Age of Arrears	Amount (lac taka)	Probability of Collection	Provision for Bad Debts
1985	30 days or less	44		
	31 to 60 days	2		
	61 to 90 days	2		
	91 to 120 days	1		
	121 to 180 days	1		
	181 days to 1 year	0		
1984	One year	50		
1983	Two years	60		
1982	Three years	65		
1981	Four years	28		
1980	Five years	10		
Before 1980	More than five years	10		
Total provisions for bad debt				xxx

repayment does not simultaneously reduce the institution's liabilities, bad debts reduce net worth and reserves which reduce the institution's solvency. Other measures, such as the collection ratio, emphasize liquidity impacts of non-repayment. These and several other issues associated with reporting and accounting practices are discussed in a new EDI paper of the World Bank that is well worth study.

### Conclusion

Monitoring loan recovery is much like tracking blood pressure: poor loan recovery can lead to serious problems while a sudden deterioration can be fatal. Widespread loan delinquency and default can tear at the basic fiber of society by encouraging evasion of contracts. Unfortunately, it appears that far too little attention has been paid to rural loan recovery in Bangladesh. As a result, there don't seem to be well-established procedures for carefully collecting and reporting data on this important aspect of the performance of financial institutions. Some of the research reports that have been prepared during the past few years have not been as careful as they should have been in defining and interpreting data on loan recovery. Some of the changes in reporting introduced by the Agricultural Credit Department of the Bangladesh Bank may help correct problems. The best data system will fail, however, unless there is a strong desire by decision makers for good information. The emphasis in the past seems to have been on loan disbursement rather than loan recovery so it is not surprising that appropriate data systems

have not been put in place. Let us hope that this situation has changed so work can begin on carefully measuring and analyzing loan recovery.

References

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